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February 1, 2000

Air Protection Division (3AP21)

Mr. David L. Arnold
Chief, Ozone & Mobile Sources Branch
Mailcode 3AP21
U.S. Environmental Protection, Region III
1650 Arch Street
Philadelphia, Pennsylvania 19103

RE: *PECO Energy comments on 64 FR 70428-70444 "Approval and Promulgation of Air Quality Implementation Plans; Pennsylvania; One-Hour Ozone Attainment Demonstration for the Philadelphia-Wilmington-Trenton Ozone Nonattainment Area"*

Dear Mr. Arnold:

PECO Energy appreciates the opportunity to provide comments on the above referenced Federal Register notice.

As you may be aware, PECO Energy supported EPA's 110 NOx SIP Call regulation during the regulatory development process. PECO Energy also supported Pennsylvania's August 1997 Section 126 petition. Our support of these actions was offered since we believe that the electric generation industry has a responsibility, as one of many significant contributing source categories, to provide its fair share of the solution to attainment of the one-hour ozone standard. The general approach taken under the 110 SIP Call to set a uniform emission reduction requirement for the electric industry, and apply it over the very broad region of contributing states, will provide a very significant reduction in regional nitrogen oxide (NOx) emissions in a manner which recognizes the interstate nature of power generation and the long-range transport potential of ozone/NOx.

The 110 SIP Call was developed in response to the Ozone Transport Assessment Group (OTAG) process which concluded in 1997. The OTAG reached a number of major conclusions at the end of its two year investigation into the ozone issue. PECO Energy is concerned that EPA's Federal Register Notice requires the affected states to identify an additional 62 tons/day of VOC reductions, but offers the states the opportunity to substitute NOx reductions for the required VOC reductions. Allowing for the substitution of NOx reductions for required VOC reductions ignores one of the OTAG's key conclusions that "VOC controls are effective in reducing ozone locally and are most advantageous to urban nonattainment areas." (*OTAG Executive Report, 1997, page 4*).

Since a significant portion of the Philadelphia-Wilmington-Trenton nonattainment area consists of urban geography (which is more responsive to VOC reductions in terms of reducing local peak ozone concentrations - i.e. those readings that will determine real world ozone attainment or nonattainment), we believe that EPA should not allow the substitution of NOx reductions in the Philadelphia-Wilmington-Trenton nonattainment area for the VOC reductions specifically required by Section 182(c)(2)(B) of the Clean Air Act. This is particularly true since EPA has already issued a broad-based regional NOx reduction program in the form of the 110 NOx SIP Call and Section 126 regulation (of which we have been supportive).

EPA's calculation of the relative need for additional reductions of NOx and VOCs (in its technical support document to the Federal Register notice) seems to be consistent with the concept that additional VOC reductions will be more effective in reducing peak ozone levels in the urban nonattainment area than will additional NOx reductions. That is, EPA's technical support document suggests an additional 62 tons of VOCs and 3 tons of NOx are needed in order for the Philadelphia-Wilmington-Trenton nonattainment area to demonstrate attainment.

This conclusion that additional VOC reductions are needed is also consistent with the local emissions inventory identified in the technical support document to the Federal Register notice for the Pennsylvania portion of the nonattainment area which indicates more VOCs (428 tons) available for reduction, and less NOx (317 tons), in 2005. The conclusion is also consistent with a May 1996 presentation to the Southeast Pennsylvania Ozone Stakeholders Group (convened by the Pennsylvania Department of Environmental Protection) during which E.H. Pechan reviewed the emission inventories of the Philadelphia-Wilmington-Trenton nonattainment area. Select slides from this presentation are attached as "Attachment A". As part of this presentation, which was designed to help stakeholders understand local emission inventories and the relative

effectiveness of VOC and NOx reduction strategies, E.H. Pechan calculated the VOC/NOx ratio for the Philadelphia-Wilmington-Trenton non-attainment area as equaling "3.19". For the five southeast Pennsylvania counties, the ratio was "4.40". With regard to these ratios, E.H. Pechan's presentation stated that "At VOC/NOx ratios less than 8-10, lowering VOC reduces ozone, and NOx control might increase ozone at some urban locations." This suggests that local NOx reductions can be counterproductive to reducing ozone levels in the nonattainment area given the chemical process involved in ozone formation and the fact that aggregate VOC emissions are consistently higher in the nonattainment area than are aggregate NOx emissions.

We believe that EPA should not allow substitution as part of the attainment demonstration process under Section 182(c)(2)(A) as substitution has the potential to result in continued, real world nonattainment of the one-hour ozone standard in the Philadelphia-Trenton-Wilmington nonattainment area. Again, this is because progress towards real world attainment in urban areas is always made when VOC emissions are reduced, but progress in urban areas may not take place, or even be reversed, by the substitution of NOx reductions for required VOC reductions in urban areas.

Section 182(c)(2)(A) also states that "this attainment demonstration must be based on photochemical grid modeling or any other analytical method determined by the Administrator, in the Administrator's discretion, to be at least as effective." While EPA's 1993 NOx Substitution Guidance provides a mathematical method to determine a substitution ratio, PECO Energy does not believe that utilization of this guidance is "at least as effective" as photochemical grid modeling. That is, the guidance provides for the utilization of a simple mathematical formula to calculate the substitution ratio. However, this mathematical formula does not include any "analytic method" or scientific basis to support its use in the Philadelphia-Wilmington-Trenton nonattainment area.

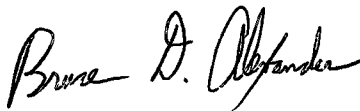
For example, unlike photochemical modeling, EPA's NOx Substitution Guidance does not incorporate the ability to consider unique, local emission inventories and other subregional variables which may affect the relative benefit, or disbenefit, of various combinations of NOx and VOC reductions. In this sense, PECO Energy does not believe states should be allowed to utilize, *carte blanche*, NOx substitution without undergoing an additional, more rigorous analytic test that considers local conditions and potential impacts to real world attainment. We are very concerned that real world attainment be achieved in a timely fashion as this is the metric which will prevent, or trigger, the various sanctions under the CAAA for a region's failure to attain the 1-hour ozone NAAQS. NOx substitution may satisfy the short-term need to complete theoretical attainment

February 1, 2000
PECO Energy Comments on 64 FR 70428
Page 4

demonstrations, but at a cost of potentially sacrificing the longer-term ability of our region to demonstrate actual ozone attainment.

Again, PECO Energy appreciates the opportunity to comment on this Federal Register notice. Please contact me at 215-841-5687 if we can provide any additional information.

Sincerely,



Bruce Alexander
Senior Environmental Project Consultant

Attachment (1): "Attachment A"

cc: w/out attachment

Mr. Morris Fine
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Mr. J. Wick Havens
Chief, Division of Air Resources Management
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Ms. Marcia L. Spink
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1650 Arch Street
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Attachment A

Select slides from May 1996 E.H. Pechan & Associates presentation
to the Southeast Pennsylvania Ozone Stakeholders

**Five Pennsylvania County Portion of
Philadelphia-Wilmington-Trenton Area
NO_x Emissions - tons per day**

	1990	1996	2005
Point Sources	170.0	100.0	99.0
Area Sources	23.4	25.4	28.5
Nonroad Engines/Vehicles	99.8	103.6	109.3
Highway Vehicles	158.3	134.5	105.8
Total	451.5	363.5	342.6

Five Pennsylvania County Portion of Philadelphia-Wilmington-Trenton Area VOC Emissions - tons per day

	1990	1996	2005
Point Sources	155.7	136.9	151.7
Area Sources	204.8	183.8	196.6
Nonroad Engines/Vehicles	80.6	81.3	84.8
Highway Vehicles	188.2	103.0	54.4
Total	629.3	505.0	487.5

Select slides from May 1996 E.H. Pechan & Associates presentation
to the Southeast Pennsylvania Ozone Stakeholders

Emissions-Based VOC/NO_x Ratios

	VOC (tons per day)	NO _x (tons per day)	VOC/NO _x Ratio
Man-Made			
Entire NA Area	1,199	1,079	1.11 * 46/16 = 3.19 pppc/ppm
5 PA Counties	666	440	1.51 * 46/16 = <u>4.40</u>
Philadelphia County	189	125	1.51 * 46/16 = 4.34
With Biogenics			
5 PA Counties	777	445	1.75 * 46/16 = 5.0

- At higher VOC/NO_x ratios (greater than 8-10), ozone concentrations are relatively insensitive to VOC concentrations, and NO_x control is more effective in reducing ozone.
- At VOC/NO_x ratios less than 8-10, lowering VOC reduces ozone, and NO_x control might increase ozone at some urban locations.